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ENVIRONMENTAL PRESSURES IN ORGANIZATIONAL FIELD OF BEEF MEAT IN PAMPA BIOME: COMPARATIVE STUDY BETWEEN ARGENTINA AND BRAZIL

PRESSÕES AMBIENTAIS NO CAMPO ORGANIZACIONAL DA CARNE BOVINA EM BIOMA PAMPA: ESTUDO COMPARATIVO ENTRE ARGENTINA E BRASIL

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Abstract

Cattle production has been associated with environmental problems. In the Pampa biome, traditional cattle production area in South America, it has not been different. As a result of these problems, a set of pressures have emerged from producer countries, their companies and farmers. Considering this problem, this article aims to describe the environmental pressures being exerted on the beef organizational field in the Pampa biome in Argentina and Brazil. To achieve this goal, interviews have been developed with actors of this field. In Argentina, the coercive pressures based on laws and regulations did not present a level of development compared to Brazil. In Brazil, Law No. 12651 of May 12, 2012, the environmental theme is present, regulating the farming activity through the concepts of legal reserve and permanent preservation areas. This law includes the need for a rural environmental registry that supports the environmental regulation process and there is nothing like that in Argentina. Regarding normative pressures, it was observed that in Argentina these are just as important as in Brazil. In Argentina a long time the environmental issue is a concern of research organizations and rural extension, including universities, and farmers associations dedicated to the diffusion and transference of new technologies. In the state of Rio Grande do Sul this concern

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appears in EMBRAPA, researching a more appropriate production system to the biome Pampa that it could be economically and environmentally viable.

Keywords: Environment. Organizational fields. Pressures. Beef meat. Pampa biome.

Resumo

A produção bovina tem sido associada a problemas ambientais. No bioma Pampa, tradicional área de produção de bovinos na América do Sul, isto não tem sido diferente. Como consequência um conjunto de pressões têm surgido sobre os países produtores, suas empresas e produtores rurais. Considerando esta problemática, este artigo tem por objetivo descrever as pressões ambientais que estão sendo exercidas sobre as organizações dos campos organizacionais da carne bovina inseridas no bioma Pampa na Argentina e Brasil. Para atender a este objetivo, foram realizadas entrevistas aos atores de diferentes elos que integram estes campos organizacionais. Na Argentina as pressões coercitivas associadas as leis e disposições obrigatórias não apresentaram um grau de desenvolvimento comparativamente ao Brasil. No Brasil, a Lei nº 12.651 de 12 de maio de 2012 regula a atividade agropecuária através dos conceitos de reserva legal e área de preservação permanente. Dita lei inclui a necessidade de um registro ambiental rural que apoia o processo de regularização ambiental das propriedades e que nada é parecido na Argentina. Em relação às pressões normativas observou-se que na Argentina estas são tão importantes quanto no Brasil. Na Argentina desde muito tempo o tema ambiental constitui uma preocupação dos organismos de pesquisa e extensão agropecuária, incluída a universidade, e as associações de produtores dedicadas a difusão e transferência de novas tecnologias. No Estado de Rio Grande do Sul esta preocupação aparece na EMBRAPA através da pesquisa de um sistema de produção mais adaptado ao bioma Pampa e que seja economicamente e ambientalmente viável.

Palavras-chave: Meio-ambiente. Campos organizacionais. Pressões. Carne bovina. Bioma Pampa.

Introduction

A set of environmental impacts have been associated with cattle. Among them, the main problem is the emission of greenhouse gases (GHG) such as methane and nitrous oxide. In more intensive productions, fossil fuel emissions, fertilization and transport are added (IPCC, 2007; INTA, 2014). According to Girardin (2007), other aspects are also taken into accounts, such as concerns about desertification in rural areas and animal welfare in production processes. Specifically, in the Pampa biome, a traditional bovine cattle production region in South America in Brazil and Argentina, the presence of environmental problems linked to desertification, loss of biodiversity and soil compaction is observed (BALBINO et al., 2011; KRÜGER, 2013; RUVIARO et al., 2016). As a consequence of the environmental problems generated, the main international food trade has reacted generating regulations, guidelines and rules of conduct to which the producer countries and their companies must comply, limiting access to markets. These pressures come from consumers, control institutes from importing countries, health prevention programs, and protocols adopted by local or external value chain actors regarding voluntary quality assurance standards (CHIDIAK; MURMIS, 2003; SECILIO, 2005).

Therefore, the objective of this article is to describe from the neo-institutional approach (DIMAGGIO; POWELL, 1983), the coercive and normative origin of the contextual environmental pressures for the actors of the organizational fields of beef in the Pampa biome of Argentina and Brazil. The description is made to clarify the content of said pressures and evaluate their degree of development and institutionalization in the regions covered by the research, Southwest of Buenos Aires – SOB, province of Buenos Aires (Argentina) and South of Rio Grande do Sul state (Brazil). In the production and exportation of beef, Brazil has grown since 2014 reaching first place in the world ranking, while Argentina has decreased its participation, relegating itself to eleventh place (USDA, 2016). Taking into account this different performance in the international market and the lack of comparative studies on the context of agri-food chains under the theory of organization, the study aims to fill gaps in knowledge about environmental institutional pressures that affect regional development in Argentina and Brazil, where the cattle of the Pampa biome presents similar

productive and cultural realities. On the other hand, the institutional pressures of the environment have normally been addressed in sectors such as health or education within the public sphere. Consequently, it is intended to advance in a field of research in the administrative discipline of recent interest, which focuses on analyzing the pressures that affect sectors submitted a) to market forces, due to the greater strategic interference that stakeholders have received in the last years (MACHADO-DA-SILVA; COSER, 2006; RIQUEL LIGERO; VARGAS SÁNCHEZ, 2013).

The article is structured in the following sections: firstly, the fundamental concepts on Neo-institutionalism in the Organization Theory that guided the description and classification of environmental pressures in cattle farming in Argentina and Brazil are mentioned (section 2). Then the methodological aspects followed to meet the objectives of the work are detailed (section 3). After that, the coercive and regulatory environmental pressures identified are described (section 4). Finally, conclusions are presented based on the results found (section 5).

Neo-institutionalism in the Theory of the Organization

Since the 1950s, studies in Administration have been concerned with analyzing the influence of context on organizations and their strategies to adapt to the changes that occur in it. In recent years, the complexity and dynamism of the organizational environment have increased competitive and institutional pressures, many of them associated with sustainable production. The Institutional Theory in Sociological Neo-institutionalism Literature stands out as one of the Theories of the Organization that pays more attention to the environment since it focuses on aspects of the institutional context in which organizations are immersed (GREENWOOD et al., 2008). It considers that the survival and success of organizations within the competitive structure of markets will not only depend on the efficiency and control of key resources but also the institutional pressures of their environments (DIMAGGIO; POWELL, 1983). These pressures play an important role in shaping the reality of organizations and can be interpreted differently, influencing their performance. Consequently, it is recognized that the institutional environment provides meaning and stability to social behaviour, shaping and restricting organizational actions (PACHE; SANTOS, 2010).

For Carvalho and Vieira (2003) this makes possible a more precise delineation of the configuration of an activity area, which constitutes an "organizational field" and therefore, the elaboration and implementation of more appropriate public policies to contribute to local development. The notion of an organizational field is the unit of analysis of Neo-institutionalism. An organizational field includes organizations that produce goods or similar services, suppliers, buyers, consumers, regulatory agencies, among others. They have in common that they participate in the same meaning system and interact more frequently with each other than with others (DIMAGGIO; POWELL, 1983). Therefore, the organizations that comprise it are not necessarily linked by geography or objectives; their distinctive feature is that they make up a recognized area of institutional life (DIMAGGIO; POWELL, 1983).

Institutional demands are present in an organizational field, which are conformity pressures exerted on organizations by institutional referents to achieve legitimacy (PACHE; SANTOS, 2010). This means that if organizations do not adapt to the institutional environment, they may suffer an economic disadvantage for not adapting to institutional patterns. On the other hand, by not understanding or sharing the same cognitive structures as other organizations, they may require more time, financial and managerial effort to understand and adapt to new institutional requirements. Finally, there can be a social cost given by the loss of support from stakeholders or key interest groups, for not considering their expectations reflected in institutional demands, affecting legitimacy (LLAMAS SÁNCHEZ, 2005).

According to sociological neo-institutionalism, there are three types of pressures: coercive, normative, and mimetic or cognitive. "Coercive pressures" are defined by DiMaggio Powell (1983) as formal or informal pressures that come from other organizations or constituents of the organizational field on which they depend, and from the cultural expectations of the society within which the organization must operate. On this concept, Heugens and Lander (2007) explain its content, arguing that coercive pressures have been empirically operationalized in two ways. In the first place, the term dependency refers to resources, that is, it occurs when there is a dependency on critical resources present in the environment so that the organizations or agents that hold these resources exert influence by it. For example, impositions or requirements to be met to access markets, to obtain financing, to dispose of inputs or other productive factors, etc. Second, the cultural expectations of modern society are represented by the legal system emanating from the

State. Therefore, from the conjunction of these aspects, arises that coercive pressures include laws, decrees, regulations, controls and sanctions (SCOTT, 2001). The normative pressures refer to a prescriptive, evaluative and obligation dimension (RIQUEL LIGERO; VARGAS SÁNCHEZ, 2013). They are represented by norms and values. For Scott (2001) values are conceptions of preferences or desires along with the construction of standards that can compare and value existing structures and behaviours. Standards specify how things should be done, define legitimate methods for pursuing values. Therefore, normative pressures allude both to goals or objectives and the way to reach them (RIQUEL LIGERO; VARGAS SÁNCHEZ, 2013). DiMaggio and Powell (1983) consider two important channels through which normative pressures can spread in an organizational field. One channel is for the professionalization of organizations, through the incorporation of knowledge of certain practices by professionals and university or technical advisers. Another channel is representing participation in networks, where direct interaction with peers or indirectly through associations or chambers, enables standards to be shared of what is collegially considered appropriate for an activity (HEUGENS; LANDER, 2007; RIQUEL LIGERO; VARGAS SÁNCHEZ, 2013).

Finally, there are other types of pressures called cognitive or mimetic pressures that arise in the face of the uncertainty generated by the use of complex technologies, the difficulty of deciphering the appropriate means-ends relationships, the existence of ambiguous or controversial goals, or, the symbolic noise of the organizational environment (SCOTT, 2001; HEUGENS; LANDER, 2007). These types of pressures refer to the cognitive dimension of people and find their empirical application in the imitation of predominant practices (often used) in a certain organizational field, or that produced positive results for others, or models of perceived organizations as successful (HEUGENS; LANDER, 2007; RIQUEL LIGERO; VARGAS SÁNCHEZ, 2013). These latter demands will not be addressed in this work.

Methodology

In order to investigate the coercive and normative institutional pressures present in the organizational field of the bovine meat chain of the Southwest of Buenos Aires (Buenos Aires, Argentina) and South of Rio Grande do Sul state (Brazil), an exploratory-descriptive study of a qualitative type was carried out (HERNÁNDEZ SAMPIERI et al., 2010). Two data collection techniques were used: document consultation and semi-structured interviews. For the documentary and interview analysis, the content analysis technique was used (BARDIN, 1977).

Research in documents was chosen since it allows answering questions about the past and the changes that have occurred using documents (SAUNDERS et al., 2011). Secondary information sources from national and provincial public bodies, laws and regulations, official reports, institutional documents and scientific works were surveyed to making a first identification of the institutional pressures of the organizational field of bovine meat in the regions under study. Secondly, data collection through interviews was selected to offer the researcher perceptions and interpretations of the pressures that affect organizations and may also suggest sources that complement the evidence (SAUNDERS et al., 2011).

The interviews were based on the construct proposed by Heugens and Lander (2007) that includes the definitions of the pressures and their origins, adopting the questions and structure indicated in Table 1.

The interviews were carried out with qualified referents from the organizational field of bovine meat. In Argentina, seven livestock producers, two estate consignees, managers of four meatpacking plants, a service provider, the manager of a regional supermarket, the representative in the Southwest of Buenos Aires of the Angus Breeders Association a researcher and extensionist of the National Institute of Agricultural Technology -INTA, an official from the National Service for Agri-Food Health and Quality -SENASA and two researchers from the National University of South in the Animal Production area. In Brazil, two researchers from the Brazilian Agricultural Research Company (EMBRAPA) were interviewed, one from the Southern Livestock unit (Bagé) and the other from the Temperate Climate unit (Pelotas).

In both units, they were supported by at least two other researchers participating in research and technological dissemination projects on cattle production in the Pampa biome. The interviews were also carried out with the coordinator of the Pelotas city unit of the State Department for Agriculture, Livestock and Agribusiness (SEAPA), with the collaboration of a veterinary doctor who works directly in the inspection of refrigerators; to the president of the Association of Rural

Producers of Pelotas; and a manager of a regional supermarket network. The interviews lasted an average of two hours, were carried out during the period May-September 2015 and were recorded and transcribed in order to identify the empirical foundations of the questions raised in theory, analyzing the data from the literature review.

Table 1: Pressure categories and their structures considered in the interview design.

Categories	Definition that guided the main question	Structure	Definition of structure
Coercive pressures	Pressures exerted by one or more organizations on other organizations dependent on them. They can be formal or informal or arise from cultural expectations of the society in which the organization operates. (DIMAGGIO; POWELL, 1983).	Resource dependency	The extent to which a focal organization (the one under pressure) depends on critical resources present in the environment so that the organizations that hold these resources influence that focal organization (PFEFFER; SALANCYK, 1978).
		Legal influences	Imposition of standard operating procedures and legitimized rules through government mandate (DIMAGGIO; POWELL, 1983).
Regulatory pressures	Collective struggle of the members of the organizational field to define the conditions and methods considered appropriate for their work (DIMAGGIO; POWELL, 1983).	Professionalization	Cognitive training derived from the formal education of university specialists (DIMAGGIO; POWELL, 1983).
		Networks	Growth and development of formal networks between close organizations that allow models, values and norms to spread more quickly (DIMAGGIO; POWELL, 1983).

Source: Adapted from Heugens and Lander (2007).

Environmental pressures in Argentina (SOB) and Brazil (South of Rio Grande do Sul state- RS)

Coercive origin of environmental pressures in Argentina

In Argentina, although the Constitution of 1853 did not expressly recognize the right of all the inhabitants to enjoy a healthy environment, the general opinion of the doctrine considered it tacitly because it was referenced in several articles of it. With the reform of the National Constitution in 1994, extremely important articles were added, incorporating the issue of resources and environmental protection in articles 41, 42, 43 and 124 (FORMENTO, 2008). The art. 41 states:

"All inhabitants have the right to a healthy, balanced and suitable environment for human development and for productive activities to meet present needs without compromising those of future generations and have the duty to preserve it. Environmental damage will primarily generate the obligation to repair, as established by law."

This article is the source for future environmental laws and the reference to which the jurisprudence refers in the environmental problems that generate conflicts (FORMENTO, 2008). This constitutional mandate has been complying with the sanction, among others, of the "General National Law on the Environment" No. 25,675, of the year 2002, which determines minimum environmental protection, imposing necessary conditions for the environment. In art. 8 the instruments of environmental policy and management are established, which will be: the environmental planning of the territory; Evaluation of environmental impact; the control system over the development of anthropic activities; environmental education; the environmental diagnosis and information system and the economic regime for promoting sustainable development. From this article, the obligation to carry out an environmental impact assessment before the execution of any work or activity that is likely to degrade the environment is established and the contracting of

environmental insurance is established if the activity were risky for it, the ecosystems and its constituent elements.

Of all the natural resources, the soil has a special meaning for being the place of settlement and food source for man. Although the aforementioned law does not have specific regulations for soil protection in its articles, it constitutes progress towards creating a sustainable environment for current life and future generations. However, its regulation arises from the Civil Code and federal or local laws or provisions. Already in 1948, Law No. 13,246 called "Law of Rural Leases and Partnerships" regulated among its articles the precept of "avoiding erosion". This law continues in force with its successive amendments, the last one being from 1980 by Law No. 22,248. In 1973, Law No. 20,496 was passed, through which it tries to promote the use of fertilizers. In 1981, the "Law for the Promotion of Soil Conservation" No. 22,428 was passed, declaring private or public action aimed at soil conservation and the recovery of its productive capacity of national interest. The enforcement authorities may declare a soil conservation district, the area where it is necessary, and the creation of conservation consortiums made up voluntarily by the producers of the input, which may receive subsidies from the National State for expenses and investments to the effects of covering these two aspects "conservation and recovery", a situation that has not had a practical or operational application (FORMENTO, 2008).

As for the specific regulations for livestock activity, they arise from the National Health Organization –SENASA– (National Service for Agri-Food Safety and Quality), dependent on the Ministry of Agriculture of the Nation, and more have been developed for fattening corral, considering the growth that production has had in confinement as a result of the displacement of the agricultural frontier. The aforementioned body, through Resolution 70/2001 created the National Registry of Livestock Establishments of Fattening a Corral. Even though there is no legislation on environmental management in *feedlots* in Argentina, the aforementioned SENASA resolution in its art. 12, establishes that all the actions, veterinary, sanitary and production practices carried out with animals, must be done by the legal provisions in force regarding the protection and well-being of the same. For example, in some provinces such as San Luis, Entre Ríos and Mendoza, fattening a corral is subject to compliance with the legislation of a specific nature in the management of effluents, corpses, places of installation, among others, its application corresponding, in principle, to the agricultural authorities. Some ordinances have been issued in municipal jurisdictions. At the national level, the "General Environmental Law" No. 25,675 establishes minimum budgets for general environmental protection that are applicable in local jurisdictions, which would hold the owners of the bovine fattening establishments responsible, as interpreted jurisprudentially. The progress achieved in the sanction of provincial environmental regulations related to *feedlots* and the creation of environmental departments in different control agencies allows us to glimpse an irreversible trend to achieve an adequate and specific legal framework for these activities (GONZÁLEZ ACOSTA, 2014).

A second institutional demand of a coercive type that has been identified in Argentina is related to Animal Welfare (AW). As a member of the WTO (World Trade Organization), Argentina takes the WA standards of the proposed Terrestrial Animals Code by the OIE (International Office of Epizootics). As for the enforcement body, among SENASA's competences, Decree 825 of 2010 determines what is to be understood in the planning, programming, coordination and management control of plans and programs for the WA. Within the regulatory framework linked to the WA, the following rules can be listed in chronological order: 1) The first law that gives protection to animals is Law No. 14,346 of the year 1954, which stipulates penalties between 15 days and one year of prison for those human behaviours characterized as mistreatment and/or cruel acts; 2) Law No. 18,819/70, deals with desensitization techniques in animal slaughter and prohibits the use of mace; 3) Resolution 1286/93 SENASA and Decree 206/2001 regulate the production and elaboration of organic food. In them, WA requirements are listed as environmental conditions and handling practices, which must be complied with to achieve product certification; 4) By Resolution 97/99, the National Registry of Means of Transport is created in order to ensure the WA during its transport; 5) SENASA Resolution No. 1421 of the year 2000 establishes, in art. 3, that in order to proceed to the rehabilitation or habilitation of the properties, they must inevitably have adequate facilities that enable the proper management, inspection and treatment of the estate, such as pens and loading bays; 6) Resolution 25/2013, establishes that in the concentrating estate markets, specifically the Liniers Market, the use of horses for the herding of minor cattle, as well as the walking herd of cattle is prohibited. The use of lasso, herdsman and dogs is prohibited. The use of the electric prod is regulated. Likewise, anyone

found to be treating cattle improperly is severely punished; 7) Resolution 46/2014 incorporates Chapter XXXII on Animal Welfare into the Inspection Regulations for Products, By-products and Derivatives of Animal Origin, approved by Decree No. 4,238 of July 19, 1968. Especially directed to slaughter places. All manufacturing that are under federal control must implement it, establishing the obligation to develop a WA manual that includes the monitoring of suppliers and good practices during the transportation of animals; 8) Resolution 581/2014 creates the National Sanitary Registry of Means of Transport of Live Animals, which provides computer system approved vehicles and incorporates recommendations of Chapter 7.3 of the OIE.

Coercive origin of environmental pressures in Brazil

A first demand, cited by the Association of Rural Producers of Pelotas, that livestock producers are having to attend to, refers to the federal legislation called the New Forest Code (Law No. 12.651, of May 25, 2012). This law institutes significant demands or pressures for the Brazilian meat chain. This law has its origin in the first and second Brazilian Forest Code of 1934 and 1965. In this version of the year 2012, the protection of the natural environment continues to be an obligation of the owner of rural property, by maintaining protected spaces in its private property, divided into two concepts called: Permanent Preservation Area (PPA) and Legal Reserve (LR). The PPA is defined as a protected area covered or not with native vegetation, with the environmental function of preserving water resources, the landscape, geological stability and biodiversity, facilitating the genetic flow of fauna and flora, protect the soil and ensure the well-being of the human population. The current Forest Code, in its art. 4, establishes as areas of permanent preservation:

- I. The marginal strips of any perennial and intermittent natural watercourse, excluding ephemeral ones, from the edge of the regular bed channel, in a minimum length of:
 - a) 30 meters, for watercourses 10 meters long;
 - b) 50 meters, for watercourses 10 to 50 meters long;
 - c) 100 meters, for watercourses from 50 to 200 meters long;
 - d) 200 meters, for watercourses from 200 to 600 meters long;
 - e) 500 meters, for watercourses with a length greater than 600 meters;
- II. The areas around the lakes, in a strip with a minimum length of:
 - a) 100 meters in rural areas, except for a body of water with up to 20 hectares, the marginal strip of which will be 50 meters;
 - b) 30 meters, in urban areas.
- III. The areas around the artificial water reservoirs, which come from the containment or dam of natural watercourses, in the strip defined in the environmental license of the undertaking;
- IV. The areas around the springs and the perennial water holes, whatever their topographic situation, within a minimum radius of 50 meters;
- V. The slopes or parts of these with a decline greater than 45 °, equivalent to 100% in the line of greatest decline;
- VI. The restingas (coastal Tropical and subtropical forest), as dune fixers or mangrove stabilizers;
- VII. Mangroves in all their extension;
- VIII. The edges of the plateaus, up to the breaking line, in a strip never less than 100 meters in horizontal projections;
- IX. The top of the hills, mounds, mountains and scarps, with a minimum height of 100 meters and an average inclination greater than 25°, the areas delimited from the level curve corresponding to 2/3 of the minimum elevation height, always in relation to the base, being defined by the horizontal plane determined by the adjacent plain or water mirror, or in the wavy reliefs, by the elevation of the closest top of the elevation;
- X. Areas with an altitude greater than 1,800 meters, whatever their vegetation;
- XI. On roads, the marginal strip, in horizontal projection, with a minimum length of 50 meters, from the permanently flooded space.

The LR area is defined as the area located inside a rural property or rural possession, delimited in terms of art. 12, with the function of ensuring the economic use in a sustainable way of the natural resources of the rural property, helping the conservation and rehabilitation of ecological processes and promoting the conservation of biodiversity, as well as shelter and protection of wildlife and native flora. It is added that every rural property must maintain a plot with coverage of native vegetation, as a Legal Reserve, without prejudice to the application of the rules on Permanent

Preservation Areas (PPA), observing the following minimum percentages in relation to the surface of the property, except for the cases provided for in art. 68 of this law:

I. Located in the Legal Amazon: a) 80% of the property located in a forest area; b) 35%, in a property located in the savanna area; c) 20%, in a property located in the area of the general fields;

II. Located in the other regions of the country, 20% (Case of the Pampa biome).

The PPAs can be added in 20% when the sum of the native vegetation existing in the PPA, plus that of the RL exceeds: a) 25% of the property, in the case of small properties. Small property, according to the definition of the Forest Code, is one with an area of up to 30 hectares, in which the owner and his family exploit it through personal work, and whose gross family income is removed from the property by at least 80%; b) 50% in the case of other properties.

The new Forest Code exempted properties with up to 4 fiscal modules from the obligation of comprehensive compliance in the LR area. Depending on the region, the size of the fiscal module varies between 5 and 110 hectares. In that case, properties of up to 440 hectares are free to recover the legal reserve. This is justified by the need to protect family farming and small producers.

The novelty of this new version was the Rural Environmental Registry (Rural Environmental Registry-CAR) that supports the process of environmental regularization of rural properties and possessions. It consists of surveying real estate geo-referenced information, delimiting the Permanent Protection Areas (PPA), Legal Reserve (LR), remnants of native vegetation, consolidated rural area, areas of social interest and public utility, to draw a digital map from which values of the areas for environmental diagnosis are calculated. The CAR has been in force since May 6, 2014, and must be carried out within a year, counted from its implementation, extendable for one more year, utilizing an act of the Presidency of the Republic. The CAR is defined as an electronic registry, made through the internet, for all rural properties in the country. Its purpose is to promote the identification, environmental regularization and monitoring of rural properties and possessions, integrating their environmental information.

A second demand identified in the interviews for the agricultural companies and also for the meatpacking plants, refers to Animal Welfare (WA). According to MAPA (2015), the legislation on WA in Brazil began with Decree No. 24,645 of July 1934, which established animal protection measures. The current Federal Constitution of 1988, in its art. 225, grants the public power of competence to protect fauna and flora, prohibiting practices that subject animals to cruelty. In this logic, in 2008 the Permanent Technical Committee on Animal Welfare, which belongs to the Ministry of Agriculture, was created by Ordinance No. 185 of March 2008 (Ordinance MAPA No. 524 of 2011). Its objective is to coordinate the various WA actions of the Ministry and promote the adoption of good WA practices in the production chain, always based on current legislation and available technical and scientific knowledge. According to MAPA (2015), the legal regulations contemplated by the WA in Brazil are represented by 1) Decree 30,691 of 1952 - Approves the new Regulation of Industrial and Sanitary Inspection of Products of Animal Origin; 2) Ordinance 524 of March 2011 - Institutes the Permanent Technical Commission for specific studies on Animal Welfare in the different areas of the livestock chain; 3) Normative Instruction 46 of 2011 - Approves the Technical Regulation for Organic Systems of Plant and Animal Production; 4) Normative Instruction 56 of November 6, 2008 - Establishes the general procedures for Recommendations for Good Practices in Animal Welfare for Production and Economic Interest Animals (Rebem), including production and transport systems; 5) Normative Instruction 3 of 2000 - Approves the Technical Regulation of Methods of Insensitization for the Slaughter or Humanitarian Slaughter of Animals for butchers. Other legislations that contemplate Animal Welfare are (MAPA, 2015): 1) Law No. 11,794 of October 8, 2008 - Establishes procedures for the scientific use of animals; 2) Decree No. 24,645 of July 1934 - Establishes animal protection measures; 3) Law No. 10,519 of July 17, 2002 - Provides for the promotion and supervision of animal health defence; 4) Law 9.605/98 "Environmental Crime Law", is the Brazilian legislation that deals with animal protection and welfare (wild and domestic), and condemns painful or cruel experiences in live animals. On the other hand, the consideration of the WA in the production of beef affected the organizational structure of the Department of Agriculture and Livestock of the State of Rio Grande do Sul. In 2013, a section of WA was created in the organization chart of the Department, which already has financial and personnel resources to carry out activities related to the topic (SEAPA researchers). However, it is recognized that progress is necessary. It is necessary to increase the dissemination of this knowledge in agricultural companies (SEAPA researchers; EMBRAPA PECUÁRIA SUL researchers).

Regulatory origin of environmental pressures in Argentina

Different public and private organizations show concern for environmental management in the beef chain, but it was found that they are addressed from specific cases, not being a subject of general analysis, but rather a remediation or management guidelines in activities that presented ecological problems. A farmer considered that "[...] in terms of environmental management, thinking about certifications, there is very little development. It is not a theme installed in the SOB livestock, but it can be interesting". Three bovine producers of breeding, full cycle and *feedlot*, do not observe, like the consignee, that environmental certifications are still under high pressure, although they highlight that progress is being made in the sustainable management of agricultural productions. One of the interviewees highlights that there are aspects to improve (for example, burning habits). In the case of the meat-packing plants interviewed, the focus is on the management of waste and effluents from the industry to comply with current regulations.

From the university academic sphere, one of the researchers specialized in animal production, expressed that: "[...] in all scientific and technological congresses and meetings, environmental sustainability is one of the subjects of greatest concern. Argentina must incorporate these issues to enter the international market" (UNIVERSITY RESEARCHER 1). He emphasizes that in the country, he does not find that the consumer is concerned about environmental management and certifications of this type. The producer must adapt his way of producing in order to be able to enter the markets that require it and make more changes. Another university researcher specialized in cattle refers to the problems of the environmental impact of cattle farming in the region. He considers that:

[...] They occur mainly in places where there is soil degradation and in natural grasslands, where degradation, in addition to affecting the soil, is a degradation of the grassland; that occurs due to loss of species of high forage value and its replacement by woody or other species of low forage value. They are difficult to reverse and very costly situations (UNIVERSITY RESEARCHER 2).

From the interviews, it was found that the environmental issue is being investigated and disseminated from agricultural research and extension organizations, including the university, and from producer associations dedicated to the diffusion and transfer of new technologies for agriculture, defining Good Agricultural Practices (GAP). These channels that promote professionalization in environmental issues appear with greater relative strength. In 2015 Argentina created the GAP Network, which is made up of thirty public and private institutions that seek a space for an exchange where they can reach consensus on this subject and achieve its dissemination. The members of the Network understand that GAP is a strategic instrument to adequately address the challenges of quantitative and qualitative growth in national and global demand for agro-industry products, which implies the integration of availability, quality and safety and the sustainability of agro-industrial production.

One of the axes that make up the Good Agricultural Practices (GAP) is Animal Welfare. Specifically, on this issue, in Argentina various institutions are interested and spread it, expressing greater concern in recent years. The Institute for the Promotion of Argentine Beef (IPCVA) has published publications on the relationship between WA and the quality of meat, estimating the losses in the chain that are caused by mistreatment of animals. It has also developed dissemination material such as booklets on good practices for handling livestock, onboarding and transportation, and for handling the farm in meat-packing plants. Other actions in favour of raising awareness of the topic included the dissemination of videos and the organization of conferences. INTA has also addressed the issue with specific projects and publications, such as the Practical Manual of Animal Welfare and the publication on Critical Points associated with WA in cattle slaughter plants in Argentina (INTA researcher). The organization justifies the study of this subject from the ethical, economic and commercial point of view. From an ethical point of view, due to the importance that consumers give to the ethical treatment with which animals are raised for consumption. From the economic point of view, due to the large losses that occur, due to ill-treatment. And from the commercial point of view, because the lack of WA could become a tariff barrier for livestock products of national origin (INTA researcher). Regarding the importance that the different links of the chain assign to the WA for the development of Argentine livestock, only one interviewee from primary production considers it to be of low importance, the others rated it with moderate to high relevance. The producers and consignees consider that the WA should be implemented in the primary sector; The representatives of the industrial and commercial sector consider that it is in this area where the implementation of controls in this aspect is relevant.

Regulatory origin of environmental pressures in Brazil

Regulatory pressures were found in Brazil that seeks to improve productive approaches to make them sustainable. A notable pressure in the interviews refers to the need for a change, which is already taking place, in the livestock production system of the Pampa biome (EMBRAPA PECUÁRIA SUL researchers). It was found that the researchers' interest were in investigating and disseminating technical approaches that are sustainable for regional meat farming since they understand that the current systems, originating from European countries, New Zealand or Australia, do not consider the particular characteristics of this biome. The criticism that is made is that these are economically and environmentally unsustainable in the long term (EMBRAPA PECUÁRIA SUL researchers). One of the first problems identified is productive specialization, that is, agricultural production is carried out separately from livestock and vice versa, which leads to the proposal of an integrated agriculture-livestock system (EMBRAPA PECUÁRIA SUL researchers). The integration of agriculture-livestock is defined as the diversification, rotation, consociation or succession of agriculture and livestock activities within a rural property, harmoniously, in the same system, so that there are benefits for both (BALBINO et al., 2011). Afforestation may be included in this integration, in which case the system becomes forestry-agricultural-pastoral. This is defined as a sustainable production strategy that integrates agricultural, livestock and forestry activities, carried out on the same surface, in consociated culture, in succession or rotation (BALBINO et al., 2011).

Finally, the researchers corroborate the need to research and disseminate new technologies by highlighting that another criticism that is made to the current bovine production systems in the Pampa biome is that they are still not very productive. The researchers interviewed agree that production in this environment should not be synonymous with "producing little". If little is produced in the Brazilian Pampa biome, it is because what is known about that environment is not used today. They argue that pasture feed is a highly valued system in North America and even in South America (EMBRAPA PECUÁRIA SUL researchers). According to those interviewed in EMBRAPA CLIMA TEMPERADO, the current market increasingly requires the guarantee of quality food, produced under market requirements at all stages of production. However, there are few agricultural companies certified with Good Agricultural Practices (GAP). But that demand constitutes a differential, according to researchers, certified rural properties are the ones that export the most meat. In Brazil, GAP protocols include, as in Argentina, some concepts of Animal Welfare. For EMBRAPA PECUÁRIA SUL researchers, consumers are observing whether WA practices are being carried out by producers. This is a matter in which progress has been made in the production of beef in the Rio Grande do Sul:

[...] If we consider the last ten years, in the Rio Grande do Sul, 90% of our properties used dogs to work with animals. Today 30%, if not less, still have a dog, but to work with sheep. Currently, if you go to a rodeo, you can see the staff working on the sleeves with flags, while some years ago they did it with whip and shouting (EMBRAPA TEMPERADO CLIMA researchers).

It is also a matter of concern in the meat-packing plants, mainly about the humanitarian slaughter. The SEAPA veterinarian gives as an example, the times of desensitization and bleeding of animals, which are minimal today, through the use of modern technologies such as the pneumatic gun:

[...] These concentrating auction sites, with sleeves and corrals, until recently had no water and were exposed to the sun. Today they have coverage and water. These cares are part of a checklist that is controlled so that authorization is given so that the event can take place. In addition to that, it is necessary to have a technical responsible for the event, who must be a veterinarian (SEAPA veterinarian).

Furthermore, the logistics of the animals were also adapted. The trucks were adapted, for example "[...] closing and rounding the back of trucks so that the animals did not have access to the movement of the street, and thus being able to keep them calmer and avoid blows" (EMBRAPA CLIMA TEMPERADO researchers). The WA is also included in the technology transfer guideline. In this sense, many training activities were carried out especially with the peons who work in the fields and with the farm transporters (EMBRAPA PECUÁRIA SUL researchers). The matter of the WA is received in the subjects of the relevant university careers. In this regard, the researcher from Embrapa Clima Temperado-Pelotas stated that professors from the Federal University of Pelotas dictate subjects on the topic, and also, carry out research activities.

Final comments

The objective of this work is to describe the environmental pressures that affect the actors in the organizational fields of beef in Argentina (Southwest of Buenos Aires–SOB, province of Buenos Aires) and Brazil (South of Rio Grande do Sul state) included in the Pampa biome, under a neo-institutional approach. Coercive and regulatory claims were examined. It was observed that in Argentina the coercive pressures in the matter of environmental protection specific to rural activity do not show as much development as in Brazil. Regarding Animal Welfare, included as one of the pillars of Good Agricultural Practices, the regulatory progress on this topic has been observed to be very similar in both countries, increasing in recent years. Regarding regulatory pressures, it was found that in Argentina these are as important as in Brazil. In Argentina, the environmental issue is a concern of agricultural research and extension organizations, including the university, and producer associations dedicated to the diffusion of new technologies for agriculture. In Brazil, the environmental subject is being worked on in research organizations like EMBRAPA and universities. In both countries, the results of the interviews have confirmed the existence of regulatory pressures to adopt sustainable practices that contemplate the differential characteristics of the Pampa biome, coinciding in concluding that the producer has not yet properly internalized them to adapt its production systems both in Brazil as in Argentina. Primary production is the most impacted link in terms of the need to incorporate production and management methods for sustainable livestock management with animal welfare.

This research has the limitations of a qualitative study that does not allow generalizations of the conclusions formulated, therefore future studies may adopt other confirmatory techniques. However, efforts have been made to advance in the preliminary understanding of the current situation of environmental pressures in the Pampa biome of Argentina and Brazil, given the lack of applied research on administrative discipline in this area of impact on regional development and commercial trends glimpsed in agribusiness. Future research may expand this study to cover other types of present demands or investigate the content of the environmental pressures in force in other livestock sectors for their comparative evaluation. It is also proposed to deepen the analysis of institutional cognitive pressures.

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